MA4EX950H-1225T

Silicon Double Balanced HMIC Mixer
700 – 1200 MHz

Rev. V1

Features

- 7.0 dB Typical Conversion Loss
- +13 to +17 dBm LO Drive
- HMIC IC Process
- Silicon High Barrier Schottky Barrier Diodes
- DC - 400 Mhz IF Bandwidth
- Low Cost Miniature Plastic Package

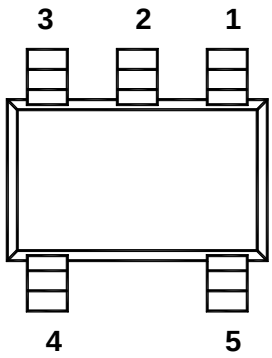
Description

M/A-COM's MA4EX950H-1225T is a silicon monolithic 700-1200 MHz , high barrier, double balanced mixer in a low cost miniature surface mount SOT25 package. The die uses M/A-COM's unique HMIC silicon/glass process to realize low loss passive elements while retaining the advantages of high barrier silicon Schottky barrier diodes.

Applications

These mixers are well suited for high volume wireless and cellular applications where small size and repeatability are required. Typical applications include frequency conversion, modulation, and demodulation in wireless receivers and transmitters.

Package Outline



PIN CONFIGURATION

PIN	Function	PIN	Function
1	RF	4	Gnd
2	Gnd	5	IF
3	LO		

Ordering Information

Model No.	Package
MA4EX950H-1225T	Tape and Reel

Electrical Specifications @ +25°C

Parameter	Frequency Rage	Test Conditions	Units	Min.	Typ.	Max.
Conversion Loss	800 MHz 0.7 – 1.2 GHz	LO Drive = +15 dBm RF = -10 dBm, IF = 60 MHz	dB		6.6 8.1	7.5 10.5
L - R Isolation	800 MHz 0.7 – 1.2 GHz	LO Drive = +15 dBm RF Level = - 10 dBm	dB	- -	27.5 23.0	
L - I Isolation	800 MHz 0.7 – 1.2 GHz	LO Drive = +15 dBm RF Level = - 10 dBm	dB	- -	28.5 28.5	
R - I Isolation	800 MHz 0.7 – 1.2 GHz	LO Drive = +15 dBm RF Level = - 10 dBm	dB	- -	25 22.5	
RF VSWR	800 MHz 0.7 – 1.2 GHz	LO Drive = +15 dBm RF Level = - 10 dBm			1.20:1 1.50:1	- -
IF VSWR	DC - 400 MHz	LO Drive = +15 dBm IF Level = - 10 dBm			1.55:1	-
Input IP3	850 MHz 0.7 – 1.2 GHz	LO Drive = +15 dBm RF = - 5 dBm, IF = 60 MHz	dBm	21.0 20.0	23.8 25.0	
Input 1 dB Compression	850 MHz 07 – 1.2 GHz	LO Drive = +15 dBm RF = -5 dBm, IF = 60 MHz	dBm	- -	8.3 9.1	
IF 1 dB Bandwidth	DC - 400 MHz	LO = 850 MHz @+15dBm	MHz	0		400

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.43537383 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

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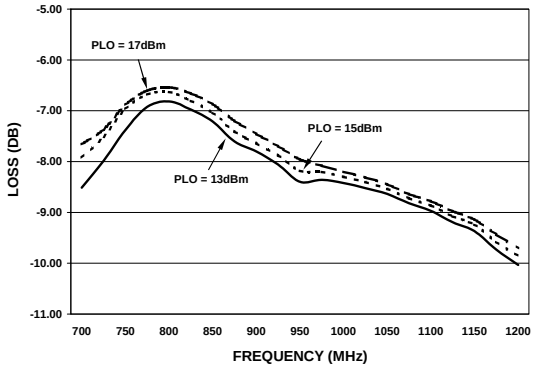
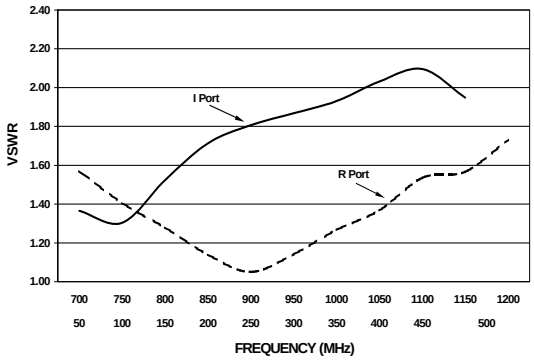
Typical Performance Curves
(LO Drive = +15dbm, RF = -10dBm, IF = 60MHz)

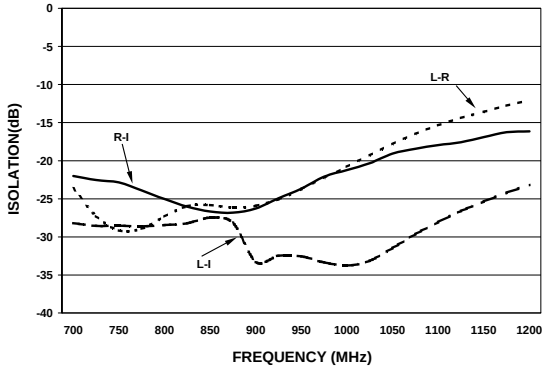
CONVERSION LOSS



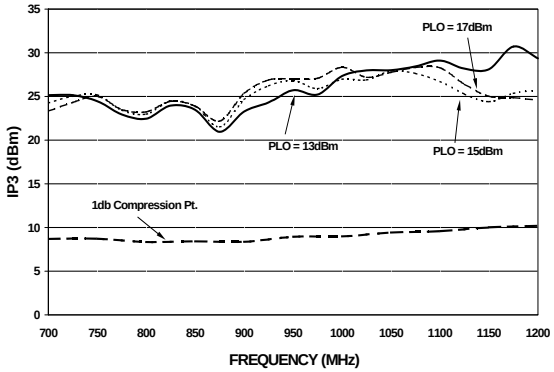
VSWR



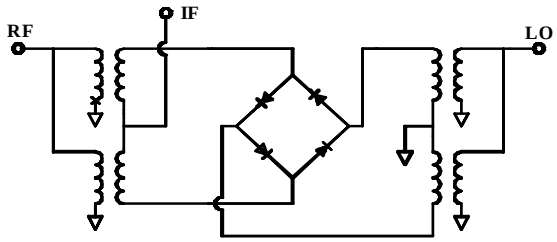
ISOLATION



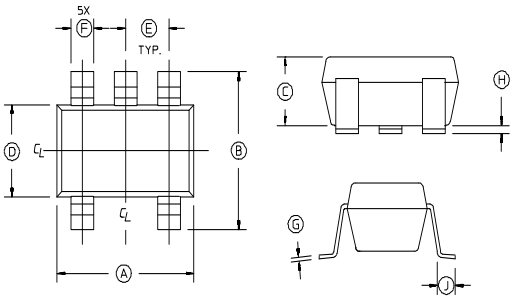
INPUT IP3 & 1dB Compression Point



Schematic



Case Style – SOT-25



SOT-25

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.106	.122	2.70	3.10
B	.100	.118	2.54	3.00
C	—	.051	—	1.30
D	.063 REF.		1.60 REF.	
E	.032	.043	.80	1.10
F	.014	.020	.35	.50
G	.003	—	.08	—
H	.000	.006	.00	.15
J	.018 REF.		.45 REF	

Notes: 1. Leads Coplanarity should be 0.003 (0.08) max.

Absolute Maximum Ratings[1]

Parameter	Maximum Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Incident LO Power	+20 dBm
Incident RF Power	+20 dBm

1. Exceeding these limits may cause permanent damage.

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